

Resolution Enhancement Technique Based on Spatio-temporal Analysis

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ABSTRACT

Resolution enhancement is a basic and important technology in image/video processing. In this paper, an adaptive resolution enhancement scheme was proposed. The goal of the proposed scheme is to reconstruct high-resolution image frames from the corresponding low-resolution versions. After giving initial estimates obtained from the spatial and temporal domains, interpolated images are reconstructed by using adaptive iterative back-projection and then fused to be a high-resolution one. Finally, a post-processing is utilized to reduce the blocking artifacts within the reconstructed high-resolution images. According to the experimental results, in terms of PSNR and NQM, the reconstructed results by the proposed scheme are better than those by three existing methods for comparison.

Keywords : resolution enhancement ; iterative back-projection (IBP) ; subpixel image

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